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PTS-WDM
PTS-DFB

DFB Laser Light Source Modules

Key Features

- *DFB Laser Diode sources calibrated to telecom ITU-T DWDM wavelengths*
- *Tight temperature control allows accurate wavelength stabilization and tuning*
- *Configurable output power*
- *Coherence control facilitates average linewidth adjustment*
- *Internal signal generator allows modulation up to 2 kHz*
- *Synchronized modulation of multiple light sources to a master sync signal—internal or external*
- *Built-in optical isolator*
- *SM and PM fiber output options and 5 connector choices*



Newport extends a 1-year warranty on all electronic parts of DFB-based Stabilized Light Source Modules, and a 90-day warranty on all DFB laser diodes used inside these modules.

The PTS-WDM stabilized DFB Laser Diode Modules feature high output power and stable wavelength registration at specific ITU-T wavelengths, utilized in Dense Wavelength Division Multiplexing (DWDM) fiber optic telecommunication systems.

These laser sources are useful for all DWDM-related testing, whether used in prototyping and characterization of new fiber optic components and amplifiers (EDFAs) in a R&D setting, or in verifying their specifications in QA or on the manufacturing floor.

The PTS-DFB stabilized Light Source Module features a high output power, temperature stabilized DFB laser diode, operating in the 1310 nm region. Although this light source emits in the fiber optic telecommunication band, its actual wavelength makes it useful in single channel test applications, in which a stable reference light source is required.

Both the **PTS-WDM** and the **PTS-DFB** Light Source Modules include an internal optical isolator and feature the following:

Coherence Control—Available in constant current mode as an internal 50 kHz sine wave, 10% depth of modulation. Coherence control is either “on” or “off” during operation of the light source module.

Ultra-Stable Temperature Control—Enables short-term wavelength stability of ±0.005 nm

Configurable Output Power—The wavelength of the device can be fixed, while modifying the output power by 10 dB.

Wavelength Tuning—The output power of the module can be held constant while tuning the wavelength over a range of ±1 nm.

Sync or On/Off Modulation Capability—Modulation at standard test tones in constant I or P mode at 270 Hz, 1 kHz, and 2 kHz is provided for each module. Synchronization between all modules mounted in the mainframe is provided via a central sync signal, generated by the mainframe, or via input of an external synchronization signal.

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ITU-T DWDM Grid

Channel Code	Center λ (nm)	Channel Code	Center λ (nm)
18	1563.05	41	1544.53
19	1562.23	42	1543.73
20	1561.42	43	1542.94
21	1560.61	44	1542.14
22	1559.80	45	1541.35
23	1558.98	46	1540.56
24	1558.17	47	1539.77
25	1557.36	48	1538.98
26	1556.56	49	1538.19
27	1555.75	50	1537.40
28	1554.94	51	1536.61
29	1554.13	52	1535.82
30	1553.33	53	1535.04
31	1552.53	54	1534.25
32	1551.72	55	1533.47
33	1550.92	56	1532.68
34	1550.12	57	1531.90
35	1549.32	58	1531.12
36	1548.52	59	1530.33
37	1547.72	60	1529.55
38	1546.92	61	1528.77
39	1546.12	62	1527.99
40	1545.32		

Accessories

Please see the Fiber Optics and Accessories Section for fiber optic patchcords, adaptors, and many more accessories that can be used with these modules.





Specifications

Module Type	PTS-WDM	PTS-DFB
Center Wavelength (nm)	See ITU-T Grid Table	1310 ±20
Linewidth (typ) (MHz)	<30	
Wavelength Stability (nm)		
Short-Term - 15 min	±0.005	
Long-Term - 8 h[1]	±0.01	
Tuning Range (nm)	±1	
Max Output Power	2 mW (3 dBm)	2 mW (3 dBm)
	10 mW (10 dBm)	8 mW (9.2 dBm)
Power Adjustment (dB)	10	
Typical Power Stability (dB)[2]		
Short-Term - 15 min	±0.01	
Long-Term - 8 h	±0.03	
On/Off or Sync Modulation Frequency Internal	270 Hz, 1 KHz, 2 KHz	
On/Off or Sync Modulation Frequency External		
Coherence Control	On or Off	
Fiber Type	9/125 µm SM or PM	9/125 µm SM
Dimensions (H x W x D) [in. (cm)]	5.23 (13.3) x 1.39 (3.5) x 9.09 (23.1)	
Weight [lb (kg)]	1.75 (0.8)	
Storage Temperature	-20°C to 60°C	
Operating Temperature	0°C to 40°C	

1) After 1 hour of stabilization at 23 ±3.0°C ambient
2) For FC/APC adn SC/APC connectors only. Contact Newport for other connector specifications.

Ordering Information

When ordering a DFB-based Stabilized Light Source Module, please specify the following Model numbers:

PTS-WDM □□ □□ □□ □□

- ITU Channel Code – see table
- Output Power: 02 – 2 mW; 10 – 10 mW
- Fiber Type: SM – 9/125 µm SMF; PM – 9/125 µm PMF
- Connector Output Style: 25 – ST/PC; 45 – FC/PC; 55 – FC/APC; 65 – SC/PC; 75 – SC/APC

PTS-DFB □□ □□ □□

- Wavelength Code: 13 – 1310 nm
- Output Power: 02 – 2 mW; 08 – 08 mW
- Connector Output Style: 25 – ST/PC; 45 – FC/PC; 55 – FC/APC; 65 – SC/PC; 75 – SC/APC

Order example: PTS-WDM4010PM55

DFB Laser Diode Module with center wavelength of 1545.32 nm, 10 mW of output power, 9/125 µm polarization maintaining fiber pigtail and FC/APC connector output.

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